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10/555,341	10/28/2005	Jan Watte	TYR-P0002	9367

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BAKER & DANIELS LLP  
300 NORTH MERIDIAN STREET  
SUITE 2700  
INDIANAPOLIS, IN 46204

EXAMINER
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SANGHAVI, HEMANG

ART UNIT	PAPER NUMBER
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2874

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



<b>Office Action Summary</b>	<b>Application No.</b> 10/555,341	<b>Applicant(s)</b> WATTE ET AL.	
	<b>Examiner</b> Hemang Sanghavi	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/10/06</u> . | 6) <input type="checkbox"/> Other: _____  |



## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group I (claims 1-20 and 30-47 in the reply filed on February 13, 2007 is acknowledged. The amendment canceling claims 21-29 and 48-49, non-elected Group II, has been entered.

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The prior art documents submitted by Applicant(s) in the Information Disclosure Statement(s) filed on 07/10/06 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

### ***Claim Objections***

Claims 1-8, 11-13, 31-33, 36-39, and 42-47 are objected to because of the following informalities: In line 1 of claim 1, "another" should be changed to --an--. In lines 3-5 of claim 1, "the" should be deleted before the word "said" at all occurrences. Similarly, in claims 2-8, 11-13, 31-33, 37-39, 42-47, all occurrences of "the" before the word "said" should be deleted.

In line 4 of claim 31, the phrase "whereby to direct light leaving one of the optical fibers substantially entirely into the or an other optical fiber" should be changed to --whereby light leaving one of the optical fibers entirely directed into the other optical fiber--.



In line 2 of claim 33, "a" should be deleted before the word "said".

In lines 1-2 of claim 36, the phrase "which the or each opening in the or each alignment plate" should be changed to --each of the opening in the alignment plate--.

In line 3 of claim 36, "the or" should be deleted before the term "an optical fiber".

Claims appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 6-15 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In lines 4-6 of claim 4, the phrase "the latter being adapted to locate the optical fiber" renders the claim indefinite as to what does applicant meant by "the latter".

Claims 6-8 are necessarily rejected since these claims directly or indirectly depend upon the rejected base claim.

Claim 9 recites the limitation "the reflector" in line 1. There is insufficient antecedent basis for this limitation in the claim. Similarly, in claims 10-15, there is no antecedent basis for the term "the reflector".

Claims 12 and 19 recite the limitation "the collimator lenses" in line 1. There is insufficient antecedent basis for this limitation in the claim.



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Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6-10, 12-14, 16-20, 31-34, and 36-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Caracci et al (US 6,571,033 B2).

Caracci et al discloses an optical signal device for coupling an optical fiber to another optical component. See Fig. 3 for coupling between the optical fiber to another optical fiber. Caracci et al also discloses a mounting structure (12) which is claimed means for locating the end of the optical fiber in a predetermined position both parallel to and transverse the length of the optical fiber with respect to the other optical component.

As to claim 2, Caracci et al discloses prism reflectors (60, 62) wherein the light from one of the fiber is directed to other optical component.



As to claims 3-4, Caracci et al discloses lenses integrated with means for locating (12) the ends of the optical fibers to be coupled. See Fig. 3.

As to claim 6, Caracci et al discloses openings for receiving ends of the fibers and other optical component. See Fig. 3.

As to claim 9, Caracci et al discloses a prismatic element having at least one reflector surface (82) at which reflection takes place by total internal reflection (see Fig. 4).

As to claim 10, Caracci et al discloses two reflector surfaces (60, 62) orthogonal to one another (see Fig. 1A).

As to claims 13-14 and 16, Caracci et al states that the reflector may be a simple mirror such as a layer of silver (metal) deposited on the prism. See lines 24-25 of column 9.

As to claims 17-18, Caracci et al states that the lenses may be aspheric, GRIN lens (cylindrical lens), ball lens, or plano-convex lens. See lines 46-53 of column 6.

The process limitations in claims 19 and 44-45 render the claim of a product-by-process nature. The process limitation recited therein is not given a patentable weight. Even though product-by-process claim is limited by process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.” MPEP 2113.



Accordingly, no patentable weight is given to process step recited in claims 19 and 44-45.

As to claims 31 and 38, the mounting structure is construed as an alignment plate having opening for receiving ends of the fibers.

As to claim 36, as can be seen in Fig. 3, a transparent stop plate is integrally formed with the mounting structure which determines the position of the end face of the optical fiber.

As to claims 46-47, Caracci et al discloses other optical component being a light source or a photo detector in different embodiments (see Figs. 1, 1A, 3 and 4.

Claims 1-5 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano et al (US 5,175,780).

Sano et al discloses an optical fiber switch including coupling ON state of the switch comprising means (5) for locating ends of optical fibers in a predetermined position both parallel to and transverse the length of the fibers.

The light directed from one fiber to another fiber includes a reflector (5c). Sano et al also discloses collimating lenses, which are formed integrally with the reflector.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caracci et al.

As to claim 15, Caracci et al fails to explicitly disclose the reflector surface formed or associated with diffraction grating.

However, in lines Caracci et al states that demultiplexers generally use wavelength-selective optical element such as diffraction grating or interference filters to separate a demultiplexed optical signal into its component wavelengths. Such grating reflector is well known in the art.

From available well known grating filters and suggestion by Caracci et al, it would have been obvious to one of the skilled in the art at the time of the invention to replace the reflecting interference filter with a diffraction grating filter for the purpose of advantageously providing a demultiplexing device.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caracci et al and Fantone (US 4,540,246).



As to claim 35, Caracci et al fails to disclose the opening that is tapered.

Fantone, in a related art, discloses tapered openings in a mounting structure plate of an optical coupling system. Such tapered openings provide ease in mounting a tapered fiber ferrule connector with efficient coupling.

From teachings of Fantone, the ordinary artisan would have found it to be obvious at the time of the invention to provide tapered shape openings in the Caracci et al (instead of cylindrical openings) for the purpose of advantageously connecting tapered ferrule connectors and achieving efficient coupling.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Folsom et al, Li, Masui et al, Stewart, Guinard, Naghski et al, Schroll et al, Still, and Watanabe disclose claimed prismatic reflector coupling arrangement for optical fibers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is (571) 272-9955. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hemang Sanghavi  
Primary Examiner  
Art Unit 2874

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